NIEHS Hurricane Response Portal

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Background: The 2005 hurricane season demonstrated the importance of integrating geographic information systems (GIS) with environmental health research. In the case of Hurricane Katrina, the timely collection and distribution of data concerning potential environmental health hazards became a necessity to ensure public health for both the short and long term.

Methods: The National Institute for Environmental Health Sciences (NIEHS), in collaboration with the Children's Environmental Health Initiative (CEHI) at Duke University, the University of California at San Diego, Columbia University, the University of Kentucky, Research Triangle Institute, and San Diego State University, has created an interactive, Web-based GIS portal that integrates existing publicly available spatial data with disaster-specific datasets within the context of a user-friendly and highly customizable research environment.

Results: The spatial datasets contained within the portal include basic infrastructure data such as roads and power plants, potential contaminant sources including Superfund and toxic release inventory sites, hurricane damage, census data, physiographic data, and remote sensing imagery of both pre- and post-Katrina. The Hurricane Response Portal is intended to be used by groups of environmental health researchers who need a common workspace for creating, sharing, and viewing datasets, as well as GIS users who need to take advantage of the varying perspectives offered by GIS. The Portal seeks to provide the resources and environment to address the four major environmental and public health issues arising from the hurricane: respiratory health, debris management, contaminant transport, and mental health.

Conclusions: The Portal demonstrates the potential of integrating GIS into all levels of research on the environmental health impacts of natural disasters. Web-based research environments that facilitate inter-group cooperation are an innovative way to approach environmental health research and interventions.

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